

# Paracoccidioidomycosis

## (South American Blastomycosis)

Paracoccidioidomycosis is progressive mycosis of the lungs, skin, mucous membranes, lymph nodes, and internal organs caused by *Paracoccidioides brasiliensis*. Symptoms are skin ulcers, adenitis, and pain due to abdominal organ involvement. Diagnosis is clinical and microscopic, confirmed by culture. Treatment is with azoles (eg, itraconazole), amphotericin B, or sulfonamides.

Infections occur only in discrete foci in South and Central America, most often in men aged 20 to 50, especially coffee growers of Colombia, Venezuela, and Brazil. An estimated 10 million people in South America are infected. Although a relatively unusual opportunistic infection, paracoccidioidomycosis sometimes occurs in immunocompromised patients, including those with AIDS. Although specific natural sites for *Paracoccidioides brasiliensis* remain undefined, it is presumed to exist in soil as a mold, with infection due to inhalation of conidia (spores produced by the mycelial form of the fungus). Conidia convert to invasive yeasts in the lungs and are assumed to spread to other sites via blood and lymphatics.

## Symptoms and Signs

Most people who inhale conidia of *P. brasiliensis* do not become ill; illness, if it occurs, usually manifests as acute pneumonia, which may spontaneously resolve. Clinically apparent infections can become chronic and progressive but are not usually fatal. There are 3 patterns:

- **Mucocutaneous:** Infections most often involve the face, especially at the nasal and oral mucocutaneous borders. Yeasts are usually abundantly present within pinpoint lesions throughout granular bases of slowly expanding ulcers. Regional lymph nodes enlarge, become necrotic, and discharge necrotic material through the skin.
- **Lymphatic:** Cervical, supraclavicular, or axillary nodes enlarge but are painless.
- **Visceral:** Typically, focal lesions cause enlargement mainly of the liver, spleen, and abdominal lymph nodes, sometimes causing abdominal pain.

Infections may be mixed, involving combinations of all 3 patterns.



[Paracoccidioidomycosis \(Mucocutaneous Ulcers\)](#)



[Paracoccidioidomycosis \(Neck\)](#)

## Diagnosis

- Culture and/or histopathology

Clinical findings suggest the diagnosis. Culture is diagnostic, although observation of large (often  $> 15 \mu\text{m}$ ) yeasts that form characteristic multiple buds (pilot wheel) in specimens provides strong presumptive evidence. Because culturing *P. brasiliensis* can pose a severe biohazard to laboratory personnel, the laboratory should be notified of the suspected diagnosis.

## Treatment

- Itraconazole

Azoles are highly effective. Oral itraconazole is generally considered the drug of choice, primarily because it costs less than other azoles that are available in endemic areas. IV amphotericin B can also eliminate the infection and is often used in very severe cases. Sulfonamides, which are widely used in some countries because they are inexpensive, can suppress growth of *Paracoccidioides* and cause lesions to regress but are not curative and must be given for up to 5 yr.